Narratives of Race and Indigeneity in the Genographic Project

Kim TallBear

In his 21st-century explorer's uniform, Nordic-looking Spencer Wells kneels alongside nearly naked, smaller, African hunters who sport bows and arrows.[1] Featured on the National Geographic Web site, "Explorer-in-Residence" Wells hold a bachelor's and doctorate degree in biology. He is also a filmmaker who both masterminded and hosted National Geographic's 2002 documentary, *The Journey of Man: A Genetic Odyssey*, which explains to non-scientists a molecular anthropology narrative of how humans left Africa 60,000 years ago to populate the rest of the globe.[2]

In his latest exploratory adventure, Wells is the project leader and spokesperson for the recently announced "Genographic Project," a "landmark study of the human journey."[3] In April 2005, National Geographic and IBM, with funding from the Waitt Family Foundation (Gateway computers), launched the Genographic Project as a five-year "research partnership"[4] that aims to "trace the migratory history of the human species" and "map how the Earth was populated."[5]

Genographic and the Human Genome Diversity Project

The Genographic Project has been frequently compared to the failed Human Genome Diversity Project (Diversity Project), both in scope and methodological approach.[6] The Diversity Project emerged in the early 1990s when a group of scientists proposed a global survey of human genetic diversity by taking blood samples from "isolated indigenous populations" who were viewed as highly *un*admixed.[7] ("Admixture" refers to the genetic mixing of populations through interbreeding.) The idea was that such indigenes would provide clear genetic evidence of human evolutionary history. However, sampling was quickly and urgently needed before such "Isolates of Historic Interest" (an unpopular term with critics) mixed with other populations, and evidence of population origins became forever lost in a murky soup of admixed DNA.

The Genographic Project, in important ways, aims to do what the Diversity Project – hampered by controversy – failed to do. And there are ties between the two projects. For example, Wells did a post-doctoral fellowship with the Stanford University population geneticist, Luca Cavalli-Sforza, who founded the Diversity Project and is chair of Genographic's advisory board.[8] Furthermore, both the Diversity Project

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and Genographic consist of teams of scientists from around the world who collect DNA samples, mostly of indigenous peoples, to build large DNA databases – up to 100,000 samples in Genographic's case. Thus, Genographic's ultimate goal is synonymous with that of the Diversity Project: to greatly increase the size of the existing data base in order to produce a more detailed story about human migratory history and the deep historical genetic relationships between different peoples of the world. Finally, the two projects employ the trope, the "vanishing indigene," to give a sense of urgency of the need to collect blood, especially from those who are isolated both genetically and culturally.

On the other hand, Genographic consistently, but diplomatically, distances itself from the Diversity Project. Clearly conscious of Diversity Project history, Genographic disclaims medically relevant research as a motive.[9] Diversity Project organizers attempted to ward off indigenous criticism with claims about potential health benefits of their research – e.g., greater understanding of human genetic variation could eventually inform studies of diseases that plague indigenous peoples.[10] But critics were not convinced. They felt indigenous peoples had been duped before into supposedly health-related genetic research that actually had nothing to do with their pressing health issues.[11]

The Diversity Project and Genographic are not alone in generating controversy over genetics research, though the scale of their research attracts much attention. For example, in the 1990s, Arizona State University researchers drawing blood samples were accused by some Havasupai tribal members of luring them into a research project focused on diabetes, a condition that occurs very frequently among many Native American groups.[12] However, the research project turned out to also be focused on schizophrenia, which involved research into historical patterns of consanguinity. Samples were also transferred to non-ASU researchers interested in ancient population migrations. Thus, the indigenous blood samples served three research purposes.[13] The tribe accused researchers of not disclosing the schizophrenia (and consanguinity) research agenda and of aiding population migrations research. In addition to the lack of disclosure, such research was simply unwanted by the tribal government and tribal members, who eventually sued the university.[14] In light of such controversies, it makes sense that Genographic distances itself from population genetics research that claims health-related benefits for its subjects as it moves forward with basically the same research as the Diversity Project.

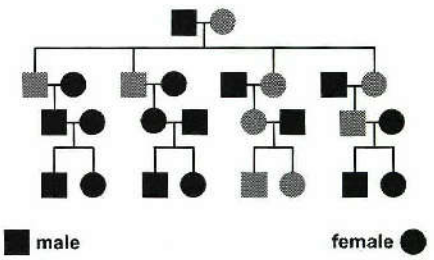
What Does Genographic Look For in Indigenous Peoples' DNA?

In very basic terms, Genographic will examine what are called "founding lineages" that are defined by DNA markers closely linked and inherited as a cluster. Genographic wants to draw blood from indigenous peoples in particular because they are widely viewed as having "mixed" less often with other populations; the genetic window onto their ancient genetic past is seen as being clearer, less muddied by "admixture."

Genographic will do one of two types of DNA analysis on an individual: it will analyze one narrow line of ancestry either within an individual's broader maternal or paternal ancestry. For the maternal line, Genographic analyzes a piece of the mitochondrial genome or mitochondrial DNA (mtDNA) through an individual's cheek swab. The mitochondria are organelles inside the cell, not nuclear DNA like the chromosomes. Both men and women inherit mtDNA from their mothers, who got it from their mothers and so on, because only women, and not men, pass it on to their offspring.

Figure 1

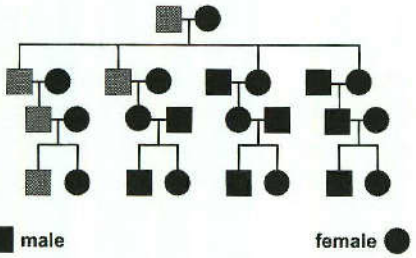
mtDNA Inheritance Pattern



This type of DNA analysis provides a precise way for tracking ancient maternal genetic lineages – along a single line. Going back ten generations, for example, each of us had approximately 2,048 ancestors. Using this form of analysis, Genographic can pinpoint the mtDNA haplogroup (or line of descent) of that one ancestor among those 2,048 from whom each human being eventually inherited their mtDNA.

The second line of ancestry that Genographic traces is shown in markers found on the Y chromosome. These markers share a similar inheritance pattern to the mtDNA because only males inherit their Y chromosome from their fathers as genetic females do not have a Y chromosome. So this is a very handy way of tracing *paternal* descent, but as with the mtDNA analysis, it is through only one narrow parental line.

Figure 2
Y-Chromosome Inheritance Pattern



These mtDNA and Y chromosome lines of descent – technically referred to as haplogroups or within which haplotypes – are found in different frequencies in different parts of the world. The nearness of the relationships between haplotypes, in combination with their geographic distributions, gives scientists a window onto the migration pathways and approximate dates of migration of these genetic markers around the globe. Depending on where such markers are found in greatest frequency in the world today, scientists often give ethnic-national labels such as "Native American DNA," "sub-Saharan African DNA," and "Indo-European DNA," etc.

While Genographic focuses on sampling "indigenous and traditional peoples,"[15] it also involves the non-indigenous public in its research. Over 180,000 individuals[16] – mostly from the U.S. but also from abroad – have purchased Genographic "Participation Kits" for approximately U.S. $99.95.[17] The kits include marketing materials in print and video and cheek swabs to take one's own DNA sample to send to Genographic. The participation kits are an odd sort of public participation. Members of the public who purchase Genographic kits get educated about the project, find out which "founding genetic lineage" they carry, help finance the project, and spread the word. But their DNA is not important for research. It is indigenous peoples' DNA that is viewed as containing "key genetic markers that have remained relatively unaltered over hundreds of generations" and having the potential to greatly expand scientific knowledge.[18]

Stories 1 and 2: "Discover Who You Are (African), and Genetic Science Will End Racism"

> *We are all much closely related [sic] than we ever expected. Racism is not only socially divisive, but also scientifically incorrect. We are all descendants of people who lived in Africa recently. We are all Africans under the skin.*[19]
>
> SPENCER WELLS

With indigenous DNA as the building blocks, Spencer Wells and Genographic have set out to construct a grand narrative of global human migration over the past 200,000 years. I break this grand narrative down into five sub-narratives, or "stories," to demonstrate how Genographic's 21st-century scientific techniques are linked to racial science dating back to the 17th century.

In its first principle "story," the Genographic Project tells participants that by learning more about the migratory routes of their "deep" ancestors, they will "discover...who they are and how we are all related."[20] With the popularization of the theory of "Mitochondrial Eve" (MtEve)[21] – the single genetic mother of all living humans – it is common to hear scientists and laypeople claim that we are all really "African."

In the second related narrative, Wells concludes that racism is incompatible with science and a scientific way of knowing the world.[22] The idea is that by embracing science, racism will be on its way to being extinguished. That is a familiar story in population genetics circles. That genetic science can end racism has come to inform the research questions, methods, and interpretations in a variety of practices that are at once scientific and cultural. Diversity Project organizers told the same story in arguing for the importance of their project.

But in one sense, the first part of the statement, "that we are all really African," says nothing. It is nonsensical given that "Africa" did not exist 200,000 years ago when MtEve's DNA is thought to have inhabited human bodies in that landmass that today we know as "Africa." Yet, on the other hand, the statement that we are all really African says a great deal because "Africa" is not simply the name given by some humans to a continent. Two longstanding colonial perspectives on Africa are at play. "Africa" cannot be understood outside recent human and colonial history, not even by geneticists. V. Y. Mudimbe, the Zairian-born philosopher, in his now classic *The Invention of Africa*[24] has described the colonial narrative of "Africa" as focused on its difference and primordialism. It has been treated by many European thinkers throughout the centuries as a place without time or history, a place of irrationality, famine, savagery, violence, and death; it is the heart of darkness. Or, to the contrary, Africa can be seen as "the Rousseauian picture of [a] golden age of perfect liberty, equality and fraternity."[25] Either way, as Mudimbe points out, "Africa" is a loaded concept for Western thinkers. It embodies much more than the notion of one particular continental landmass out of which came the ancestors of all modern humans.

At first glance, that colonial narrative of African difference does not seem to match up with those colonial

perspectives of Africa as "other," as fundamentally different, whether as a place of darkness or of perfect liberty. In the photograph leading a 2002 interview with Spencer Wells, a prototypical white man (looking very much like Spencer Wells) stands behind a prototypical African. The white man's face is slightly out of focus and half concealed behind the African. The photo seems to critique the notion that the African is "other." It seems to celebrate the genetic *connectedness* of the human species. Indeed "connectedness" is a frequently used term in Genographic public relations. But in illustrating the notion that "[w]e are all Africans under the skin," the photograph simultaneously asserts a 19th-century racial science view of connectedness where "Africans" precede the modern white man on the evolutionary chain of humanity. The African, representing the past, appears naked whereas the evolved white man is clothed, representing modernity.[26]

"We are all Africans under the skin" is the caption for a photo in Rediff Web site's interview with Spencer Wells. Is it Wells standing behind the African?[23]

Genographic does not describe the evolutionary chain of humanity in the oppressive language of race hierarchy. Races, or better yet, "populations," still exist, but instead of being set in a hierarchy as they were in the 17th-mid-20th centuries, races today in the 21st century are seen as connected: we are all one and share the same ancient genetic heritage. With the relatively recent emergence of a multi-culturalist society that supposedly celebrates difference rather than promoting it as a hierarchy, the scientific metaphor has changed, but perhaps less so than Genographic claims.

That brings us again to the second Genographic story that claims "racism is scientifically incorrect" because it is supposedly incompatible with genetic evidence of connectedness and oneness.[27] In the first instance, I read that statement as a non-sequitur. What does racism have to do with scientific correctness? Wells implies that scientific knowledge can somehow make *the* crucial intervention, halting centuries of race oppression. Where scientists in an earlier era looked at differences in observable human characteristics as supporting notions of racial hierarchy, scientists today more often look at observable human characteristics as evidencing *connectedness*.

The two notions are not opposites; they are historically connected. Wells's hope that greater knowledge of our common ancestors will "help people to overcome some of the prejudices they might have" seems naïve at best.[28] Much evidence against racial purity and easy classification of races was found in 19th-century morphological data when physical anthropologists performed precise measurements on thousands of human crania. That did not end racism.[29] While the notion of genetic connectedness may have replaced that of racial hierarchy in the lexicon of mainstream science, relations of power, difference, and hierarchy remain integral to our broader culture, to our institutions and structures, and to the culture in which science gets done and which science helps produce, as the following stories demonstrate.

Story 3: "The Vanishing Indigene"

> *Our genes allow us to chart the ancient human migrations from Africa across the continents. Through one path, we can see living evidence of an ancient African trek, through India, to populate even isolated Australia. But to fully complete the picture we must greatly expand the pool of genetic samples....Time is short...mixing populations are scrambling genetic signals. The key to this puzzle is acquiring genetic samples from the world's remaining indigenous peoples whose ethnic and genetic identities are isolated. But such distinct peoples, languages, and cultures are quickly vanishing into a 21st century global melting pot.*[30]
>
> "ABOUT THE PROJECT"
> GENOGRAPHIC PROJECT WEB SITE

In order to give a sense of urgency to their research program, Genographic relies on a centuries-old narrative, the vanishing indigene, or the hastening and inevitable mixing of populations. Since the 17th century, scientists who study human physical forms and their biological (and genetic) underpinnings have warned us that we are nearing the time when we will be irrevocably mixed – that is, when our origins will be obscured, when we will no longer be able to glimpse that definitive time of racial or populational purity. Our history – who we are – will be lost to us.

Genographic shares common ground with the Diversity Project in seeking to "archive the world's human genetic diversity" before it is too late – that is, before indigenous peoples (those "Isolates of Historic Interest") mix with other populations making DNA evidence of populational origins muddied forever by (ad)mixed DNA. Therefore, blood must be taken before such peoples "lose" their "identity" and "vanish."[31]

Such assertions by scientists about the impending doom of the indigene contradict the claims of many indigenous people(s) who view their continuing presence as peoples, cultures, land stewards, and sometimes tribal governmental entities as still vital.[32] Many indigenous people view themselves as working towards greater stability, and they resist terms that objectify them as historical and biological curiosities. The very identification of peoples under the rubric of "indigenous" is articulated precisely in order to better fight for their survival as "Peoples" who are distinct from settler societies. And so the disconnection between scientific and indigenous narratives of indigeneity is not easily bridged.

Scientists can hardly avoid narratives that privilege biogenetic delineations of indigenous identity (and thus, fears of ever greater admixture) over cultural and political delineations. By the nature of their very research questions and methods, scientists – though they wade through an uncategorizable swamp of biogenetic and cultural inputs (and surely most of them know that) – are nonetheless compelled to sort out, delineate, and categorize racial or populational groupings. Anthropologists and scientists, especially since Franz Boaz, have grappled with the notion that racial or populational boundaries are confounded by culture, rather than determining culture, but the questions that they ask – hence, the knowledge that they seek – compel them to know those groups in overly simplified ways.

The simplification occurs in the following steps: (1) from a research standpoint, scientists worry about indigenous peoples "vanishing" because they view those peoples as storehouses of unique and interesting genetic diversity; (2) more "highly admixed" indigenes, since the genetic signature of the "founding populations" is confounded, are not interesting for such research; (3) to the scientist, according to his or her necessarily narrow questions and terms, the admixed indigene is not indigenous enough; and (4) despite acknowledging that biology is not culture, narrow scientific questions lead to certain scientific methods that conflate the two – e.g., indigenous individuals who are viewed as too highly admixed are simply eliminated from the sample.

Of course, the indigene does not leave biogenetic inputs out of identity, but many other historical, cultural, and legal factors complicate indigenous identity. Indigenous ways of understanding their origins embody reckonings of people-hood based in particular histories, cultures, and landscapes. Thus, one might see how the prospect of human genetic diversity research that shows us "how we are all related," how we got to where we are today, and thus "who we really are" are not compelling research outcomes. They do not make sense if peoples already think that they have satisfactory answers to such questions. For example, Genographic is not going to tell me how I am related to my various Dakota tribal kin, the ultimate set of relations in tribal life. Nor can Genographic tell me how we got here today, although it could tell me that I have the founding "Native American" lineage dubbed "haplogroup A." The question of how we as Dakota got to where we are has already been answered, and the answer is not one of genetics. I could reference Dakota creation stories that give us values for living, narrate our common history, cohere us as a people with a common moral framework, and tie us to a sacred landbase. But another important narrative exists that, for many of us, is even more crucial today. We Dakota people got to where we are in 2007 in important ways because of the Dakota Conflict of 1862, that defining moment that so circumscribed present-day Dakota geography, family relations, governance, and identity.[33] That was the moment when our ancestors' dispossession from our ancestral lands – from the life-giving rivers in what is today southern Minnesota – was crystallized. Pushing back violently against white settlement, and the forced marches, prison camps, and mass execution that ensued, marked a bloody re-mapping of Dakota life. "Who we really are" is not a question that most, if any Dakota, will think answered by discovering that they have mtDNA markers that "originated" in Mongolia. All tribal or indigenous peoples have similarly crucial narratives whether they are creation stories or whether they are those pivotal moments in colonial history that re-shaped their lands and thus their land-based identities.

A Footnote to Stories 2 and 3: "We Are All Related"

Although admixture is a problem for the research (and for gauging who is sufficiently indigenous for research), the story of admixture is also often framed in a positive light as a "we are all related" story.[34] But this story represents a particular understanding of ancestry, kinship, and self that is culturally circumscribed, and therefore not universally cherished. Genographic privileges relatedness along maternal and paternal lines to unnamed genetic ancestors, which is valid in certain contexts. But it is a narrow notion of relatedness that when used alone, entails distinctly non-tribal ways of reckoning important ancestors and tribal relations. It is a type of genetic connectedness that says nothing specific about the crucial historical events, particular community entanglements, or contemporary governance as those things have unfolded within the timeframe of indigenous memories. Privi-

leging the genetic paradigm that "we are all related" may seem anti-racist and all-inclusive in one context, although even that is complicated as it relies on portraying Africa and Africans as primordial, i.e., the source of all of us. However, in the indigenous context, "we are all related" can very well usurp claims to identity and perhaps legal rights.

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In 1998, the Indigenous Peoples Council on Biocolonialism (IPCB) raised an alarm about this particular issue in relation to the Diversity Project:

> Scientists expect to reconstruct the history of the world's populations by studying genetic variation to determine patterns of human migration. In North America, this research will likely result in the validation of the Bering Strait theory. It's possible these new "scientific findings" concerning our origins can be used to challenge aboriginal rights to territory, resources and self-determination. Indeed, many governments have sanctioned the use of genomic archetypes to help resolve land conflicts and ancestral ownership claims among Tibetans and Chinese, Azeris and Armenians, and Serbs and Croats, as well as those in Poland, Russia, and the Ukraine who claim German citizenship on the grounds that they are ethnic Germans. The secular law in many nations including the United States has long recognized archetypal matching as legitimate techniques for establishing individual identity.[35]

The "Kennewick Man" controversy is a good example of how human genetic diversity research may be used to authoritatively contradict indigenous claims to identity and rights over human remains.[36] When the 9,000-year-old remains were found near the Columbia River in Washington State in 1996, scientists at first thought they belonged to a Euro-American settler. But when carbon dating analysis revealed them to be much older, a group of scientists called for DNA analysis on the remains in order to determine their "cultural affiliation." They feared they would lose access to study the remains when Native American tribes claimed them under the Native American Graves Protection and Repatriation Act (NAGPRA). Hoping to disrupt tribal claims and the reburial of the remains, the involved scientists called for genetic analysis of the type used in human genetic diversity research[37] in order to reveal that the so-called Kennewick Man could not be traced directly to living Native Americans (the chance that someone living that long ago has direct genetic descendants would be improbable). Thus, his race and identity could be categorized as other than Native American. Subsequently, the U.S. Secretary of Interior ordered DNA testing, although no DNA could be extracted due to mineralization of the bones. Despite the failure to retrieve DNA for analysis, morphological data was also used to support an assessment of the ancient human as morphologically similar to the Ainu in present day Japan, and not other "Native American" remains already studied.[38] The Kennewick Man case demonstrates how scientific claims of relatedness and other knowledge claims prevail over indigenous knowledge claims when the two are in conflict. Scientific meanings are viewed as the definitive meanings, and thus, scientific evidence becomes the definitive evidence.

Story 4: Genographic Is a Collaborative Project with Indigenous People

Genographic's fourth narrative premises that it is a truly collaborative project with indigenous peoples that will help preserve their cultures.[39] This narrative is another way in which the project differentiates itself from efforts, such as the Diversity Project, that loom large in the historical background.

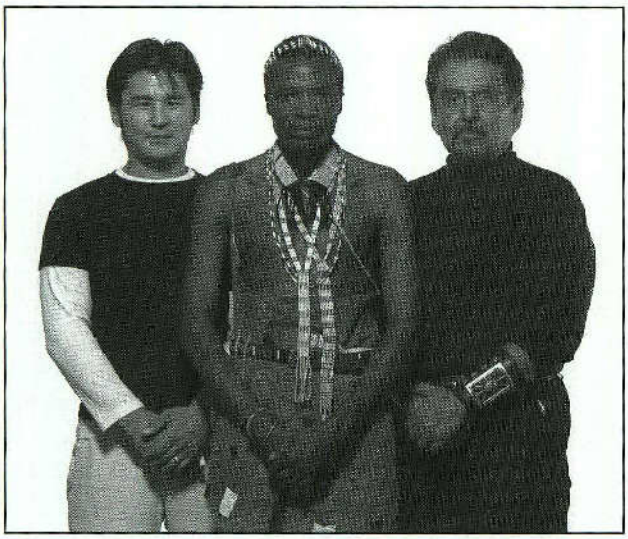
A centerpiece of Genographic's "collaborative" thrust is its "Legacy Fund," a grant program for which indigenous groups can apply for funds.[40] The sales from Genographic's Participation Kits have provided for the Legacy Fund, but what is the purpose of the fund? To "raise awareness about the issues facing indigenous peoples around the world, and perhaps help to halt the loss of indigenous cultural identities...."[41] The Indigenous People's Council on Biocolonialism (IPCB) has responded to Genographic's call for proposals by alerting its international indigenous network about "the not so altruistic motivations" behind the fund. They stated that the project provides no "direct benefit to Indigenous peoples and instead raises considerable risks."[42]

Genographic's "Indigenous Representatives"

A 30-minute video featured on Genographic's homepage in 2005 symbolizes Genographic's idea of collaboration and the assertion by Spencer Wells that integral to the Genographic Project is the goal to help communicate indigenous stories and preserve indigenous languages and cultures.[43] The video features three men, Genographic's "Indigenous representatives," who Spencer Wells interviews about "their migratory histories."[44]

Figure 3

Genographic's three celebrity indigenes from left to right: Mongolian, Tumur Battur; Hadza, Julius Indaaya Hun/!un//!ume; and Dinè, Phil Bluehouse.



The indigenous representatives featured include "a Hadza Chieftain from Northern Tanzania" (Julias Indaaya Hun/!un//!ume), a Mongolian currently living in San Francisco (Tumur Battur), and a member of the Dinè Nation or Navajo (Bluehouse). Anyone familiar with indigenous politics will immediately ask how the representatives were chosen, and by whom? The politics of indigenous representation were a significant barrier to the Human Genome Diversity Project. Even though Diversity Project organizers revised their initial approach of consulting with non-indigenous experts *on* indigenous peoples, to actually consulting *with* indigenous groups, they had already done irreversible damage to their project.

Even when organizers tried to cultivate appropriate indigenous representation, determining the criteria that constituted genuine representation was no straightforward task.[45] Biomedical ethics on which the Diversity Project drew operate on principles of *individual* consent. Applying individual consent models to groups in order to get *group* consent generated a new set of critic concerns. How should indigenous groups be chosen in order to get consent? Who decides who is indigenous in order to get participation? Would groups with questionable indigenous status, in effect, be produced in order to get consent?

Neither the Genographic Web site nor the video tell us how the featured indigenes were chosen. They are simply presented to us. In interviews elsewhere, Wells has noted that he met Battur and Bluehouse through film contacts when he produced *Journey of Man*, and he knew Indaaya from doing fieldwork in Tanzania. This is hardly the stuff of democratic participation.

On video, Wells leans forward and asks the three men to tell their stories. He asks both his live audience and viewers of the video, "What is an indigenous person?" He then tells the three men that they should tell us about themselves, about their people, their traditions, their own sense of history, who they are, where they came from, and even their creation stories.

Julius Indaaya Hun/!un//!ume and Tumur Battur tell moving but brief stories. The next indigene is the star of the show. Dinè Phil Bluehouse drives home the main point of the video: Genographic is not a research project that is in opposition to indigenous beliefs and desires. Rather, it is in sync both scientifically and spiritually with the beliefs and desires of the Dinè. This is quite a claim made by Bluehouse and indirectly then by Genographic, especially since the Navajo Nation tribal government instituted a genetic research moratorium within their jurisdictional boundaries in 2001.

Bluehouse's lengthy commentary on video (mostly in English and peppered with Dinè words) is difficult to understand, yet heartfelt. Following is an excerpted passage from Bluehouse's account:

> And we have the narrative about creation and in that creation there is a divvying up of information and knowledge and we place that information-knowledge into the sacred colors...and we're talking about how migration occurred, how migration occurred from the black realm, from the empty to the black, to the blue, to the white, and then the subsequent earth journey which is the second journey. In those there are many, many oral histories about what happened, who we contacted, who we associated with. We talk about personas, we talk about deities, we talk about relatives – all over the place. And when we're talking about those things we're actually remembering it because it's already imprinted within us in our DNA and our RNA. So we do chants, we do songs, we do prayers and all we're doing is reciting those reference points

within our existence and I think that's very exciting to me because I – I as a human being or as a Navajo or Dinè – I am very excited to know who I really am.

Such accounts of tribal peoples and their organizing narratives are serious business: they are philosophically, historically, and spiritually (for lack of better words) crucial to people-hood. Bluehouse's account incorporates a genetic metaphor that simultaneously realigns Navajo creation with an acceptable and essentialist scientific narrative. In that account, he seems to be saying that Navajo creation or life, and its most profound meanings, is understood through the molecular structure. Even the chants, songs, and prayers of people are simply recitations of the "code of life," the genetic code.

Perhaps Bluehouse's narrative is an accurate representation of Navajo belief, or perhaps not. Those of us who do not have access to Navajo language and spiritual knowledge will be hard pressed to find out. But we should all be concerned with the cultural work that his narrative does *within the specific context* of the Genographic Project. Certainly, a Navajo creation story is far older than scientific knowledge that has rendered a concise image of our genetic structure in the form of the DNA double helix. Certainly, a Navajo creation story is far older than the computer code metaphors that predominate in descriptions of that molecular form.[46] Yet are we supposed to believe that mid- to late-20th-century metaphors are inherent to ancient Navajo knowledge?

Genographic webcasts an account that will do very little to actually communicate Navajo understandings of their creation as a people. (Of course, that leaves aside the critique that some Dinè might object to Genographic webcasting anything of this sort at all.) Instead of seriously treating the substantive meaning of the creation story, the webcast communicates the idea that the language of indigenes is pretty and spiritual. Whether or not it effectively communicates meaning seems beside the point.

Rather, Genographic presents us with an image of an indigene using genetics-laden language in an emotionally charged manner. In the question and answer session of the video, Bluehouse is brought to tears when an audience member asks him about his reaction to learning about his "ancestor's journey" and the results of his Y chromosome analysis, which Wells had presented to him earlier on camera. He notes that

since...childhood I've always had this longing to – to go to a place that I eventually found out was Mongolia...through my journey – looking at maps when I was in history class in high school...it's always been a dream. It's always something that was in me. And finally, I was able to say, "Yeah, it's been confirmed, it's been there genetically – that's what genetics was trying to tell me – that you did come from somewhere." And I think that I did shed tears and it was tears of joy because – [Bluehouse starts crying and takes a moment to collect himself]. Making that connection is – I think it's very important.

Genographic and the Seaconke Wampanoag

In the Genographic video, Spencer Wells asks, "What is an indigenous person?" The video presents answers in which the desired scientific and cultural attributes meld together perfectly. The featured indigenes are sufficiently outwardly indigenous, culturally and phenotypically satisfying. Their Y chromosomes confirm their indigenous identities, their stories, and their indigenous journeys. But, what happens when scientific and cultural-racial attributes do not match up so seamlessly?

In the summer of 2005, the Seaconke Wampanoag approached Genographic because they wanted to participate as indigenous research subjects in the project. In September and October 2005, newspapers nationally ran a story, originally appearing in the Philadelphia *Times Leader*, that featured the tribe's participation.[47] Described as "a tribe that once thrived in Rhode Island and Massachusetts," the group approached Genographic to have their DNA analyzed because they wanted more data to supplement the limited paper documentation of their history as a tribe and the genealogy of their members.[48] The article features a photo of Theodore (Tad) Schurr, Principal Investigator of the North American branch of the Genographic Project, who began taking DNA samples from the Seaconke Wampanoag in August 2005. In the photo, he gazes matter-of-factly into the camera, across a mask – an indigenous profile – painted and exotic in the foreground.

An article on the Seaconke Wampanoag Web site describes an August 23, 2005 visit to the group by Schurr and another scientist, Dr. Sergey Zhadnov, who presented an overview of the Genographic Project and its understanding of human migratory history.[49] In response to the presentation, Tribal Spiritual Leader 3 Bears shared the story of Turtle Island, and an audience member suggested the possibility that peoples were also created here with others migrating in later.

Sampling began the next morning on August 24, 2005. Subjects were sampled throughout the day with the following order being observed: "First those with the closest genalogical [*sic*] connection [to] the root

of your respective clan. Second Tribal Leaders, for posterity and historical record. Third any other citizen and selected members with interesting native genealogies."[50] A couple of weeks later, Schurr attended the group's annual pow-wow, where he took additional blood samples. The article on the tribal Web site ends with the assertion that the tribe was "honored" to be a part of the Genographic study, "to be the first indigenous tribe tested in the North American sector...and to lead the way for the indigenous populations of North America...."

However, the Seaconke Wampanoag do not enjoy an unambiguous indigenous or "Indian" racial identity.[51] Judging from photos of tribal council members and other tribal members that appear in the Seaconke Wampanoag online photo album, they are a virtual rainbow of "admixture." They fall into phenotype categories that range from "Caucasian" to "African" to phenotypically ambiguous according to both genetic ideas of "population" and according to American racial sensibilities.[52] In their photos, many wear what some might refer to as "traditional regalia" in the way of dance outfits found at pow-wows all over the country.

The Seaconke Wampanoag are not a federally recognized tribe, and thus have not (yet) survived the arduous process that confers federal recognition and its attendant stamp of tribal authenticity and approval. Given the brief historical overviews on the group's three homepages,[53] the group foregrounds their descendancy from the Wampanoags who first encountered the Pilgrims in 1621. No genealogical details note any support of this connection, at least on the Web site, which is not surprising. The group laments its lack of genealogical documents and that oral history has been disrupted by colonization. What interests me is that the lack of such evidence is given as a primary reason for engaging in the Genographic Project. The mtDNA and Y chromosome analyses that the project performs to look for "Native American markers" do not point to specific relations, tribal affiliations, and recent tribal histories. Genographic's DNA analyses cannot tell the Seaconke Wampanoag who they are as Wampanoag, whereas the paper documentation and oral histories, however limited, provide some insight. Genographic's particular research is a bad technical fit for the group's particular needs.

From Genographic's standpoint, the Seaconke Wampanoag would also seem to be a poorly suited technical fit for the project's needs. The *Times Leader* article, like Genographic's project overview materials, emphasizes Genographic's desire to sample indigenous groups because they are considered less "admixed" than non-indigenous peoples. But certainly the Seaconke Wampanoag, given the obvious "admixture" of populations in their very recent genealogical history, are not considered good candidates as indigenes by a population genetics sampling standard. Why then, when the Seaconke Wampanoag approached Genographic and volunteered to be tested, did Genographic take them up on their offer? And why did the Seaconke Wampanoag go knocking on the door of Genographic instead of pursuing the many other available alternatives for DNA testing? Whatever the particular reasons and despite the technical mismatch, the two parties offer each other a great deal in terms of their respective cultural and public relations needs.

A 2003 news article described Seaconke Wampanoag's desires to have land in Rhode Island and Massachusetts returned to them, their willingness to sue, and their plans to seek federal recognition.[54] (The news account also mentions that the tribe would investigate building a casino on land acquired, although a later news account denied their interest in gaming.)[55] However, James Clifford notes in his analysis of what was at stake in the Mashpee Wampanoag court case: "Athough tribal status and Indian identity have long been vague and politically constituted, not just anyone with some native blood or claim to adoption or shared tradition can be an Indian; and not just any Native American group can decide to be a tribe and sue for lost collective lands."[56] Integral to official recognition and land claims is something that is more nebulous, but also fundamental and the stuff upon which legal claims may be won: an appropriately authentic Native American image. The cultural image of groups such as the Mashpee or Seaconke Wampanoag *as Indians* – perceptions of them by the broader society as legitimately Native American or not – is a core issue. Presenting an ungratifying racial image to our highly racialized society presents a challenge not only to making legal claims, but also cultural claims, and to personal legitimacy.[57]

By cooperating with Genographic, the Seaconke Wampanoag have received national press as the first group of indigenous people to have their DNA sampled. Being so recognized in this way affirms their self-image. As the tribe's Web site declares, "It is an honor to lead the way for the indigenous population of North America."[58] Whatever the outcomes of their DNA analyses (which are confidential unless the individuals choose to share them), the Seaconke Wampanoag have been affirmed in the national press *as* indigenous peoples. They accrue indigenous cultural capital, and Genographic is portrayed in the American press as "collaborating" with a U.S. tribe.

The relationship between the tribe and Genographic makes a good news story. It is an encouraging, multi-culturalist, liberal political story – the

congenial coming together of indigenous people and scientists in a mutually beneficial project. The benefits, however, come at the risk of subsuming indigenous definitions and meanings to genetic definitions and meanings.

Story 5: "We Are What We Were," or "Native Americans Are Really Mongolians"

Returning to the indigenous representatives' video, in which the Mongolian, the Hadza Chieftain, and the Navajo (and their Y Chromosomes) are presented dramatically to the world, a fifth key story of the Genographic Project comes into focus: "We are what we were." That narrative is poignantly presented in Phil Bluehouse's final remarks that Mongolia was always a place that he had wanted to visit, always something that was in him, and now it had been confirmed genetically. Phil Bluehouse's interpretation of ancient genetic-geographical history as essential to who he is now is not as important as how this narrative is wielded as scientific fact. Bluehouse, in this video, represents an indigenous sanctioning of a point of view that Genographic, and evolutionary scientists more broadly, have already been telling for well over a century, ever since Darwin's *Origin of Species*.

Wells begins narrating the "you are what you were" story after the indigenous men finish telling their stories, immediately after Phil Bluehouse's rendition of the Dinè creation story. He thanks Bluehouse for his story and laughs ironically; perhaps Bluehouse, he says, already knows the story that Genographic is trying to find the answer to. Wells then asks if the three men would now like to hear the results of their Y chromosome analyses, which had been performed before filming the webcast. Viewing the video, I almost expected to hear a drum roll.

Wells begins with the Hadza chieftain. He asks for the slide that shows "his journey." An enormous computer-generated slide projection appears on the black backdrop behind the stage. It shows a world map in gray and blue with the continents labeled. It is entitled, "Migration path, Julius Indaaya, Haplogroup B," as if Indaaya himself had made the journey. Presenting the geographical and temporal route of haplogroup B's migration as Julius Indaaya's own migration is a creative literary device. On the other hand, it conveys the idea that certain DNA markers are synonymous with cultural identity, an idea so consistently integrated into the language of human genetic diversity research that it must also be taken as a serious proposal.

Wells describes Indaaya's haplogroup B – defined as such according to the presence by a particular marker, M60 – as one of the "most ancient lineages in the Y chromosome tree," one that points "us back towards Africa as our common origin as a species."[59] The migration path on the slide is shown as a set of arrows moving over the continent. M60 is "very characteristic of the Hadza people," so Indaaya is "definitely Hadza, at least on the Y chromosome side," Wells says laughing.[60] Of course, Indaaya already knew he is Hadza. Citing M60 as evidence of being Hadza is an assertion of cultural authority on the part of Wells, who gives genetic evidence the say so about what is and *how* it is. Inevitably then, genetics is put in the position of saying when people are *not* what they appear to be.

Next, Wells reveals the journey of Tumur Battur, who is a member of haplogroup C3. Wells tells him and the audience that populational genetic evidence related to C3 reveals that there was "an expansion out of Africa roughly 50,000 years ago that followed a coastal route along the south coast of Asia" and that "reached Australia roughly 45-50,000 years ago."[61] Wells, the eloquent narrator of a molecular origins story, tells us about subsequent movements of people back into East Asia and into Mongolia, all of which can be seen in the distribution of genetic markers around the globe today. Wells confirms to Tumur Battur that his ancestors indeed came from Mongolia. In addition, the Mongolian has a special subset of C3 which is "found in high frequency in populations who actually have an oral tradition, where they claim descent from Genghis Kahn himself."[62] The high frequency and geographical distribution of the marker, Wells explains to Tumur Battur, "has allowed us to reconstruct what we believe is Genghis Kahn's Y chromosome, and you are a direct descendent of Genghis, we think."[63]

Of course, Wells overstretches the evidence when he suggests that Tumur Battur is a direct descendent of Genghis Kahn. The evidence only shows that people who have an oral history of being descended from Genghis Kahn share, in high frequency, a male ancestor. This is a case of using oral history, not usually considered the stuff of science, when it suits the scientist's purpose. As with his diagnosis of Indaaya's identity as Hadza, Wells authoritatively refers to the inter-continental movements over eons of a particular Y chromosome haplogroup as Tumur Battur's own personal journey. Wells makes the marker represent the human being.

Next, Wells presents Phil Bluehouse's "journey." On the projection screen, we see the title, "Migration Path, Philmer Bluehouse, Haplogroup Q." Wells explains that haplogroup Q "delineates the first major expansion into the Americas, within the past 20,000 years...."[64] The camera focuses on Bluehouse who nods his head and looks into his lap. Wells continues:

> These are people who, before they were living in the Americas, were living in Siberia. So you have connections to groups like the Chukchi people and the Tuvinians and Alpines living in southern Siberia. But before that your ancestors were hunting mammoths on the steppes of Central Asia during the last ice age. And before that they were in the Middle East during the second major wave of migration out of Africa around 45,000 years ago. So that is your journey and you are very typically Native American.[65]

Spencer Wells's narrative of the expansion of haplogroup Q into the Americas is indeed fascinating. The fact that Wells is a great story teller does not diminish the scientific evidence for his account. But who is Spencer Wells to tell Phil Bluehouse that he is "very typically Native American?" What in this particular account of the migration of haplogroup Q across the continents justifies that conclusion? Where does his authority come from? Because scientific evidence shows that Phil Bluehouse has genetic ancestors that migrated through today's Central Asia and southern Siberia, Bluehouse can be assured that he is indeed Native American?

The Genographic video and the event it documents can be seen as a well-intended, multi-culturalist coming together of scientific and indigenous knowledge, an integration of indigenous and scientific origin stories. Science is often so quick to discount indigenous origin stories, and yet here is Genographic's lead scientist in goodnatured dialogue, laughing with indigenous people, touched by the poignancy of their stories, lending credibility to their oral histories.

But the video is also a culturally authoritative performance on Genographic's part. It adds a scientific gloss to what are already meaningful cultural, historic, and spiritual narratives in their own right. Even as it proposes to support indigenous meanings and original accounts, Genographic can be seen to hollow out the meanings of those accounts by attributing other meanings to them, the *real* meanings – the scientific meanings. It confirms indigenous accounts with the real evidence – scientific evidence. By colorfully reinforcing the truth of science, such indigenous origin stories are then worthy of being broadcast to the world.

Conclusion

At stake in the Genographic Project and in this type of genetics research more broadly is a contest for meaning and authority. Who has the authority – the moral and intellectual authority (and for native people, also the "spiritual" authority) – to determine meanings and identities? In my North American context, it is not inherently problematic for indigenous peoples that science has alternative origin stories. Indigenous peoples' insistence on the veracity of their origin stories and other crucial meanings should not be equated, for example, with Christian Creationist opposition to science. Indigenous creation stories are not proselytizing; they have not historically lead to intolerance and various forms of oppression over differences in faith. Unlike evangelical Christians perhaps, Indigenous peoples could, under the right circumstances, accept that scientists have a different story about origins.

What is crucial in the fight for meaning between indigenous peoples and scientists is the historically colonial nature of how science has arrived at its origin narratives. In their quest to understand human origins and migratory history in the "Americas," the evidence gathered by scientists has come from indigenous peoples' bodies and from the remains of ancestors that lie or should lie in their historic lands. Those are landscapes with which indigenous peoples have deep and spiritual relationships, and they believe that their ancestors continue to have spiritual relationships with those places.

Thus, U.S. indigenes find it difficult to tolerate the knowledge that their bodies can be named as stores for genetic miners. Many bristle when Spencer Wells asserts that "[o]ur DNA carries a story that is shared by everyone," essentially that science has a right to the knowledge carried in indigenous DNA. Furthermore, not *everyone* claims that story. Spencer Wells's message is proselytizing; it is totalizing. It leaves no room for real alternative meanings by which human beings want to and should be able to live (not unlike the message of those Christian Creationists that annoy so many scientists).

That is the important critique, not that scientific evidence itself is debatable. Scientists themselves arrive at that conclusion, at least in part, when they endlessly dispute whether there was one migration or three, how long ago, and whether ancient peoples have sailed here across the Pacific. One can say with a good deal of credible scientific evidence that Native Americans share genetic markers with human beings in the past and who live today and in those places we now call "Asia'" and "Siberia." But what does that mean?

A word to my indigenous audience: by getting caught up in scientific debates about the truthfulness of molecular origin stories, we cede intellectual and moral authority to scientists. We enter their territory and give them the opportunity to render our world views as untruths, to demean their power. Native origin stories and oral histories are key for understanding who our ancestors were and how we got to where we are today. Some of these are relatively recent stories

like the Dakota Conflict and its aftermath. Why genetics and genetic identities should trump those formations is not obvious. The main critique is to make clear the colonial assumptions and practices that continue to inform science. Science and technology are central to nation-building and – as indigenous peoples well know and scholars increasingly assert – need to be made more democratic.[66] Thus, the fight for indigenous peoples – and for communities more broadly who are regularly subject to the scientific gaze – is to debate *which* meanings and *whose* meanings inform law and policy. That is where we should be working. To make sure that science, and the state, are more democratic, that our stories are heard as clearly as those of anthropologists and geneticists when the state acts to influence our lives. Or rather, that our stories should be heard more loudly than theirs when we have more at stake.

Note

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References

1. "Emerging Explorers: Spencer Wells," National Geographic Web site, *available at* <http://www.nationalgeographic.com/emerging/spencerWells.html> (last visited May 10, 2007).
2. *Journey of Man*, DVD, directed by Spencer Wells, Tigress Productions (PBS Home Video, 2003). Wells is also the author of the related book by the same name.
3. "The Genographic Project: Introduction," National Geographic Web site, *available at* <https://www3.nationalgeographic.com/genographic/index.html> (last visited May 10, 2007).
4. See *National Geographic, Genographic Launches Legacy Fund*, Press Release, May 8, 2006, *available at* <http://press.nationalgeographic.com/pressroom/pressReleaseFiles/1113322781773/1113322781790/GLF%20FINAL%20release_lm.agm.pdf> (last visited June 8, 2007).
5. For the second two quotes, see *National Geographic, Genographic and IBM Launch Landmark Project to Map How Humankind Populated Planet*, Press Release, April 13, 2005, *available at* <http://press.nationalgeographic.com/pressroom/index.jsp?pageID=pressReleases_detail&siteID=1&cid=1113322781773 > (last visited June 8, 2007).
6. See, for example, D. Harry and L. 'a Malia Kanehe, "Genetic Research: Collecting Blood to Preserve Culture?" *Cultural Survival Quarterly* 29, no. 4 (January 2006): 34; E. Pennisi, "Private Partnership to Trace Human History," *Science* 308, no. 5720 (April 15, 2005): 340; H. Greely, "Lessons from the HGDP?" *Science* 308, no. 4728 (June 10, 2005): 1554-55.
7. L. Cavalli-Sforza, A. C. Wilson, C. R. Cantor, R. M. Cook-Deegan, and M. C. King, "Call for a Worldwide Survey of Human Genetic Diversity: A Vanishing Opportunity for the Human Genome Project," *Genomics* 11, no. 2 (October 1991): 490-91.
8. The Genographic Project, "Frequently Asked Questions," National Geographic Web site, *available at* <https://www3.nationalgeographic.com/genographic/faqs_funding.html#Q9> (last visited May 10, 2007).
9. The Genographic Project, "Frequently Asked Questions: Question 2," National Geographic Web site, *available at* <https://www3.nationalgeographic.com/genographic/faqs_privacy.html> (last visited June 8, 2007); S. Wells, "Genetic Research: How Much We Have to Learn," *Cultural Survival Quarterly* 29.4 (January 2006): 34.
10. J. Reardon, *Race to the Finish: Identity and Governance in an Age of Genomics* (Princeton: Princeton University Press, 2005).
11. *Id.*
12. See R. Dalton, "When Two Tribes Go to War," *Nature* 430 (July 29, 2004): 500-502; Editorial, "Tribal Culture Versus Genetics," *Nature* 430 (July 29, 2004): 489; *Tilousi v. Arizona State University*, No. 04-CV-1290 (D. Ariz. 2005), *available at* <http://www.whoownsyourbody.org/havasupai-arizona.pdf> (last visited June 13, 2007); excerpts from the investigative report by S. Hart and K. Sobraske, "Investigative Report Concerning the Medical Genetics Project at Havasupai," (unpublished investigative report) December 23, 2003, available at Arizona State University Law Library.
13. *Id.* (Dalton); *Id.* (Hart and Sobraske).
14. See *Tilousi*, *supra* note 12; *id.* (Hart and Sobraske).
15. The Genographic Project, "About the Project," National Geographic Web site, *available at* <https://www3.nationalgeographic.com/genographic/about.html> (last visited May 10, 2007).
16. D. M. Behar et al., "The Genographic Project Public Participation Mitochondrial DNA Database," *PLoS Genetics* 3, no. 6 (June 2007): 1083-95.
17. The Genographic Project, "How to Participate," National Geographic Web site, *available at* <https://www3.nationalgeographic.com/genographic/participate.html> (last visited June 8, 2007).
18. See Press Release, *supra* note 5.
19. The Rediff Interview, "Dr. Spencer Wells: 'We Are All Africans Under the Skin,'" Rediff Web site, *available at* <http://www.rediff.com/news/2002/nov/27inter.htm> (last visited June 8, 2007).
20. The Genographic Project, "Sample Results," National Geographic Web site, *available at* <https://www3.nationalgeographic.com/genographic/sample_results.html> (last visited May 10, 2007).
21. R. S. Cann, M. Stoneking, and A. C. Wilson, "Mitochondrial DNA and Human Evolution," *Nature* 325 (1987): 31-36.
22. See The Rediff Interview, *supra* note 19.
23. *Id.*
24. V. Y. Mudimbe, *The Invention of Africa* (Bloomington: Indiana University Press, 1988).
25. Quoting from T. Hodgkin, *Nationalism in Colonial Africa* (New York: New York University Press, 1957) in *id.* In his opening chapter, "Discourse of Power and Knowledge of Otherness," Mudimbe references Hodgkin's classic treatment of the politics of late colonial Africa, particularly the Rousseauian image of the continent. Mudimbe notes the co-existence of seemingly contradictory myths of African otherness.
26. S. J. Gould, "American Polygeny and Craniometry Before Darwin," in S. Harding, ed., *The "Racial" Economy of Science: Toward a Democratic Future* (Bloomington: Indiana University Press, 1993): at 84-115; G. Stocking, *Race, Culture and Evolution: Essays in the History of Anthropology* (New York: The Free Press, 1968).
27. See The Rediff Interview, *supra* note 19.
28. *National Geographic, Genographic Project Director Spencer Wells, IBM Lead Scientist Ajay Royyuru Answer Questions about Project*, Press Release, *available at* <http://press.nationalgeographic.com/pressroom/pressReleaseFiles/1113322781773/1113322781790/Geno_Q&A_Final%204.26.06.pdf> (last visited June 8, 2007).
29. See, "About the Project," *supra* note 15.
30. Human Genome Diversity Project, *Human Genome Diversity Workshop 1* (Stanford, CA: Stanford University Press, 1992): at 9; see Cavalli-Sforza et al., *supra* note 7; Human Genome Diversity Project, *Human Genome Diversity Workshop 2* (State College, PA: Penn State University, 1992); Reardon, *supra* note 10.
31. J. Marks, *Human Biodiversity: Genes, Race, and History* (New York: Aldine de Gruyter, 1995); see Stocking, *supra* note 26.
32. This view on indigenous survival is the very foundation of the fields of American Indian, Native American and Indigenous Studies. Affirming the survival of peoples and promoting their

greater well-being is the reason that there even exists an international "indigenous" movement.

33. W. A. Wilson and W. C. Schommer, *Remember This! Dakota Decolonization and the Eli Taylor Narratives* (Lincoln: University of Nebraska Press, 2005). Non-Dakota thinkers have also treated the 1862 War at length, providing valuable insights, particularly into U.S. Indian policy that led to the war (G. C. Anderson, *Little Crow: Spokesman for the Sioux* [St. Paul: Minnesota Historical Society Press, 1986] and R. W. Meyer, *History of the Santee Sioux: United States Indian Policy on Trial* [Lincoln: University of Nebraska Press, 1967]). But when I say that 1862 is a prominent figure in our understanding of our Dakota-ness today, I do not want to mislead the reader by citing non-Dakota thinkers. We do not acquire our understanding of who we are in relation to 1862 by reading the necessarily narrow works of non-Dakota historians. The various Dakota communities throughout the upper Midwest and parts of Canada since 1862 have lived a history largely untreated in the scholarly literature. That is why the book by Wilson and Schommer – two Dakota thinkers – is so important. Throughout Dakota country, we refer daily to 1862, and Wilson and Schommer foreground Dakota narratives of that history. The many other citations that should be here – narratives handed down from my great-grandfather (his great-grandfather was Te-oyate-duta, a reluctant leader of the Dakota effort in 1862) to my mother and to many other family members – are largely undocumented.
34. See Press Release, *supra* note 5.
35. D. Harry and F. C. Dukepoo, *Indians, Genes and Genetics: What Indians Should Know about the New Biotechnology* (Nixon, NV: Indigenous Peoples Coalition Against Biopiracy, 1998).
36. T. D. Hurst, *Skull Wars: Kennewick Man, Archaeology, and the Battle for Native American Identity* (New York: Basic Books, 2000).
37. *Id.*; A. L. Brandt, "Suit Over Kennewick Man Revived," *The Associated Press*, October 26, 2000; J. Chatters, "Encounter with an Ancestor," *Anthropology Newsletter*, January 1997, at 9-10; S. Coll, "The Body in Question," *The Washington Post*, June 3, 2001; M. Lee, "Politics of the Past," *The Tri-City Herald* (Kennewick, WA), December 26, 1999; M. Lee, "Recasting the Past: Day Three. No Turning Back on the Kennewick Man," Kennewick Man Virtual Interpretive Center Web site, December 28, 1999, *available at* <http://www.kennewick-man.com/kman/series/index.html> (last visited June 10, 2007).
38. A. King, "Kennewick Man's Bones Provide Window to Past," *Tri-City Herald*, July 23, 2006, *available at* <http://www.kennewick-man.com/kman/news/story/7997435p-7890471c.html> (last visited June 18, 2007).
39. The Genographic Project, "Frequently Asked Questions: Question 7," National Geographic Web site, *available at* <https://www3.nationalgeographic.com/genographic/faqs_about.html> (last visited June 10, 2007); Genographic News,"Back from Chad!" link, National Geographic Web site, *available at* <https://www3.nationalgeographic.com/genographic/resources.html> (last visited June 10, 2007); "The Genographic Project," IBM Web site, *available at* <http://www-03.ibm.com/industries/healthcare/pdfs/genoflash/data/html/global_research.html> (last visited June 10, 2007).
40. The Genographic Project, "The Genographic Legacy Fund: Raising Awareness. Building Capacity," National Geographic Web site, *available at* <https://www3.nationalgeographic.com/genographic/legacy_fund.html> (last visited May 23, 2007).
41. See Press Release, *supra* note 28.
42. Indigenous Peoples Council on Biocolonialism, "IPCB Comments Regarding the Genographic Project's Request for Proposals for the Legacy Fund," February 16, 2006, *available at* <http://www.ipcb.org/issues/human_genetics/htmls/legacyfund_rfp.html> (last visited March 2, 2007). I received the forwarded e-mail notice from multiple contacts during 2006 and early 2007.
43. See Press Release, *supra* note 28.
44. The Genographic Project, "*Indigenous Representatives Talk about Their Migratory Histories*," video clip on National Geographic Web site, *available at* <https://www3.nationalgeographic.com/genographic/index.html> (last visited and transcribed October 25, 2005). Unfortunately, when accessed on December 10, 2005, the link to the video clip was no longer available. Repeated requests for a copy of the video remain unfulfilled.
45. See Reardon, *supra* note 10.
46. See E. Fox Keller, *Refiguring Life: Metaphors of Twentieth-Century Biology* (New York: Columbia University Press, 1995).
47. F. Flam, "Sweeping DNA Project Aims to Chart Human History," *Times Leader* (Philadelphia), September 5, 2005, *available at* <http://www.signonsandiego.com/uniontrib/20051005/news_lz1c05schurr.html> (last visited June 10, 2007).
48. *Id.*
49. Seaconke Wampanoag Tribe, "Archived Articles," *available at* <http://www.seaconkewampanoagtribe.net/id17.html> (last visited May 23, 2007).
50. G. Jennings Noka, "Wampanoag Nation," Seaconke Wampanoag Tribe Web site, *available at* <http://www.seaconkewampanoagtribe.net/id17.html> (last visited May 23, 2007).
51. Not unlike the Mashpee Wampanoag that James Clifford highlights in his essay, ("Identity in Mashpee," *The Predicament of Culture* [Cambridge: Harvard University Press, 1988]: at 285), the Seaconke Wampanoag would appear to be challenged by dominant societal racial images of what constitutes a "real" Indian. Clifford describes the cultural politics at play in courtroom exchanges during the 1977 trial in which the Mashpee Wampanoag Tribal Council, Inc. sued for the return of 16,000 acres of land, or three-quarters of the town of Mashpee, Massachusetts. Similarly to other eastern tribes, the Mashpee Wampanoag had intermarried extensively with other peoples and did not appear strongly Indian according to idealized standards. Clifford observes that some "could pass for black, others for white."
52. Seaconke Wampanoag Tribe, "Favorite Tribal Photos," *available at* <http://www.seaconkewampanoagtribe.com/id2.html> (last visited May 23, 2007).
53. See <Seaconkewampanoagtribe.org>; <Seaconkewampanoagtribe.com>; and <Seaconkewampanoagtribe.net> (First two sites are off-line. Third was last visited July 17, 2007).
54. R. Olivo, "Tribe: Cumberland, Woonsocket Are Ours," Woonsocket Call Web site, January 26, 2003, *available at* <http://www.woonsocketcall.com/site/news.cfm?newsid=6824581&BRD=1712&PAG=461> (last visited May 23, 2007).
55. *Id.*; V. Saksena, "Seaconke Wampanoag's Share Their Culture with the Region," September 8, 2005, East Bay RI Web site, *available at* <http://www.eastbayri.com/story/290685182316584.php> (last visited May 23, 2007).
56. See Clifford, *supra* note 51.
57. A. M. McCulloch and D. E. Wilkins, "'Constructing' Nations within States: The Quest for Federal Recognition by the Catawba and Lumbee Tribes," *American Indian Quarterly* 19, no. 3 (Summer 1995): 361-388.
58. See Seaconke Wampanoag Tribe, *supra* note 49.
59. *Id.*
60. The Genographic Project, "Indigenous Representatives Talk About Their Migratory Histories," video on National Geographic Web site, *available at* <https://www3.nationalgeographic.com/genographic/index.html> (last visited June 20, 2007).
61. *Id*
62. *Id.*
63. *Id.*
64. *Id.*
65. *Id.*
66. S. Jasanoff, *Designs on Nature: Science and Democracy in Europe and the United States* (Princeton and Oxford: Princeton University Press, 2005).